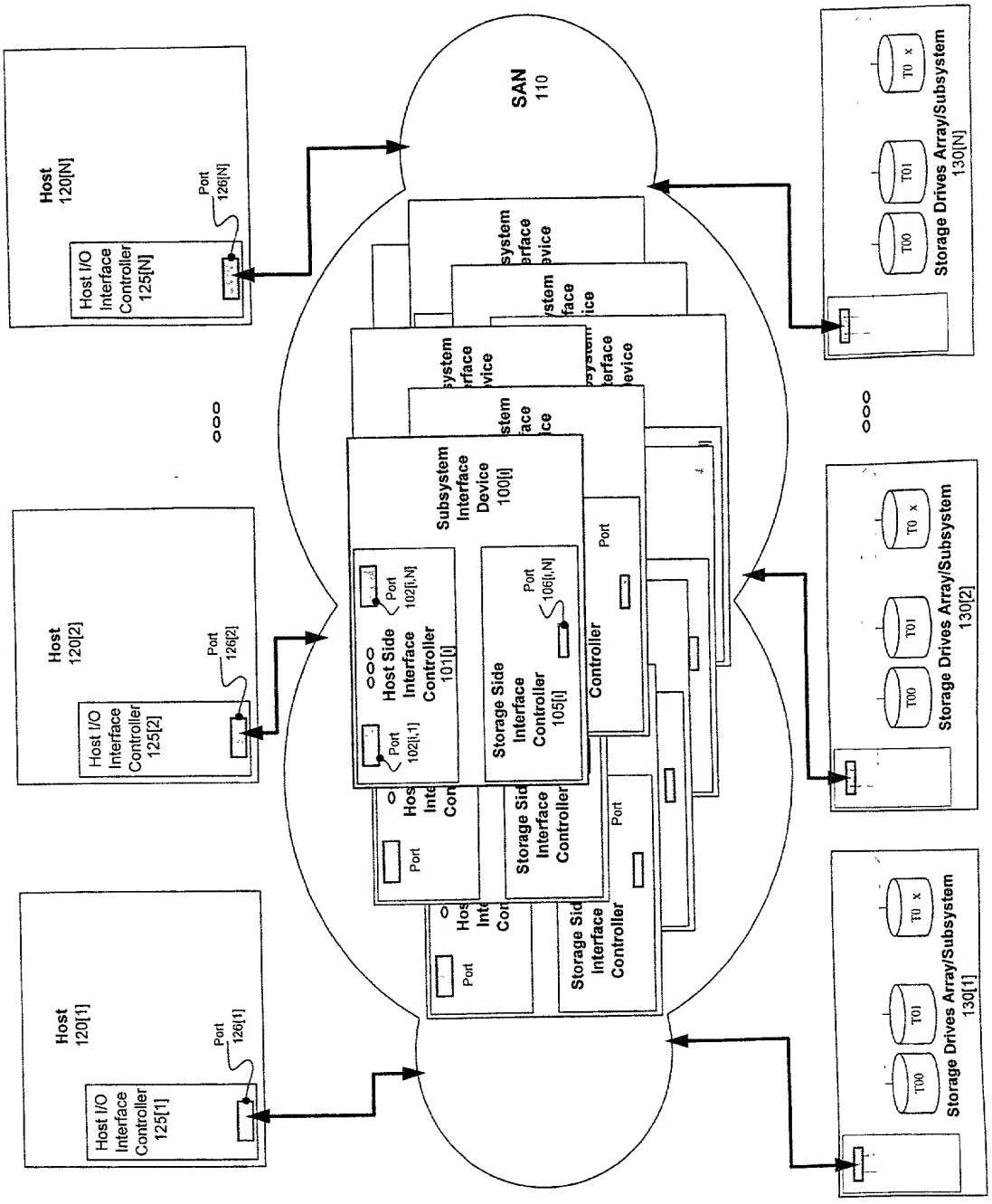
SAN
110
Host
120[N]
Host I/O
Interface
Controller
125[N]
Port
126[N]
Host
120[2]
Host I/O
Interface
Controller
125[2]
Port
126[2]
Host
120[1]
Host I/O
Interface
Controller
125[1]
Port
126[1]
Subsystem
Interface
Device
100[i]
Host Side
Interface
Controller
101[i]
Port
102[i,N]
Port
102[i,1]
Storage Side
Interface
Controller
105[i]
Port
106[i,N]
Controller
Port
Storage Drives Array/Subsystem
130[N]
Storage Drives Array/Subsystem
130[2]
Storage Drives Array/Subsystem
130[1]
T00
T01
T0 x

*FIG. 1.*

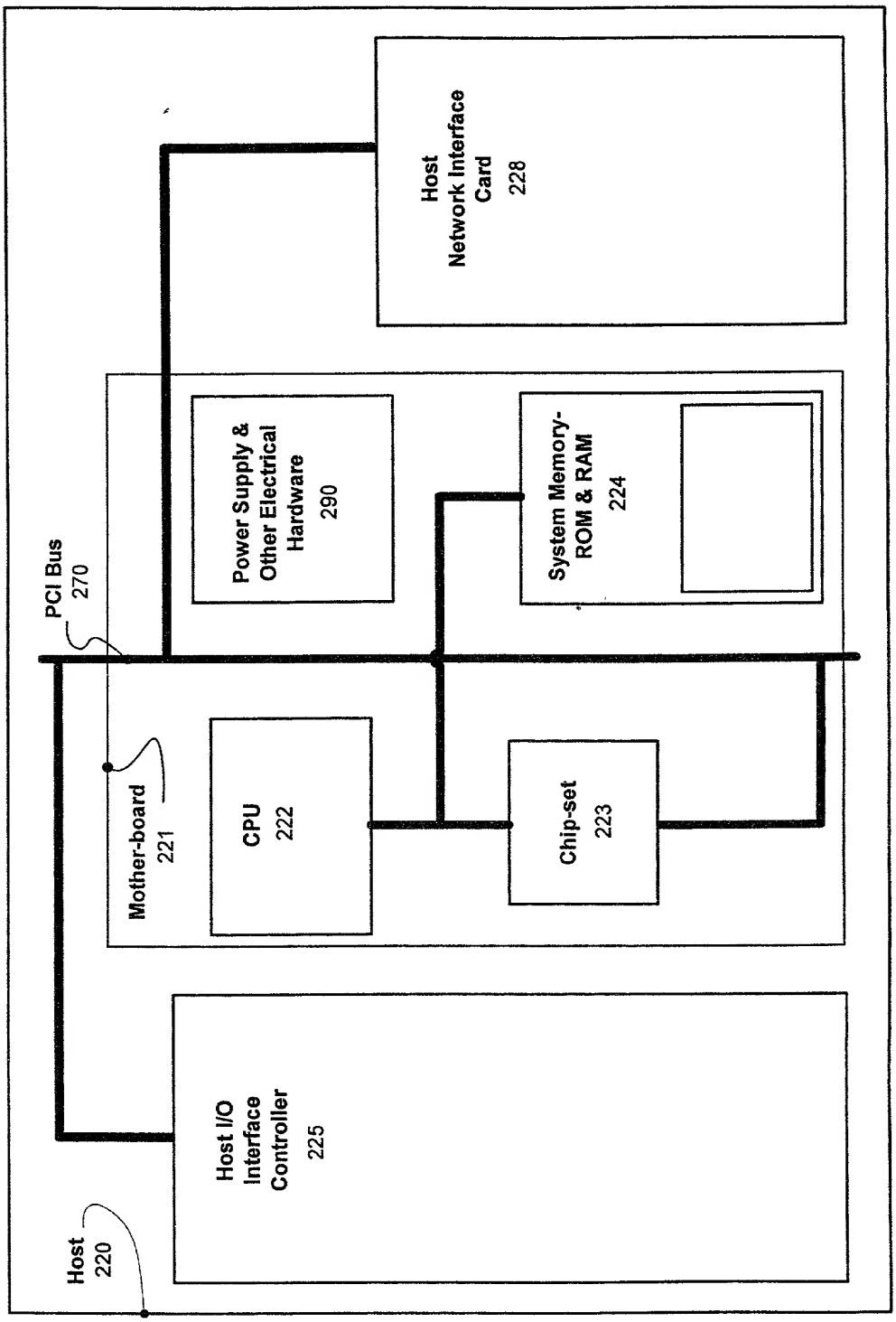
Host
Network Interface
Card
228
Power Supply &
Other Electrical
Hardware
290
System Memory-
ROM & RAM
224
PCI Bus
270
Mother-board
221
CPU
222
Chip-set
223
Host I/O
Interface
Controller
225
Host
220

FIG. 2.

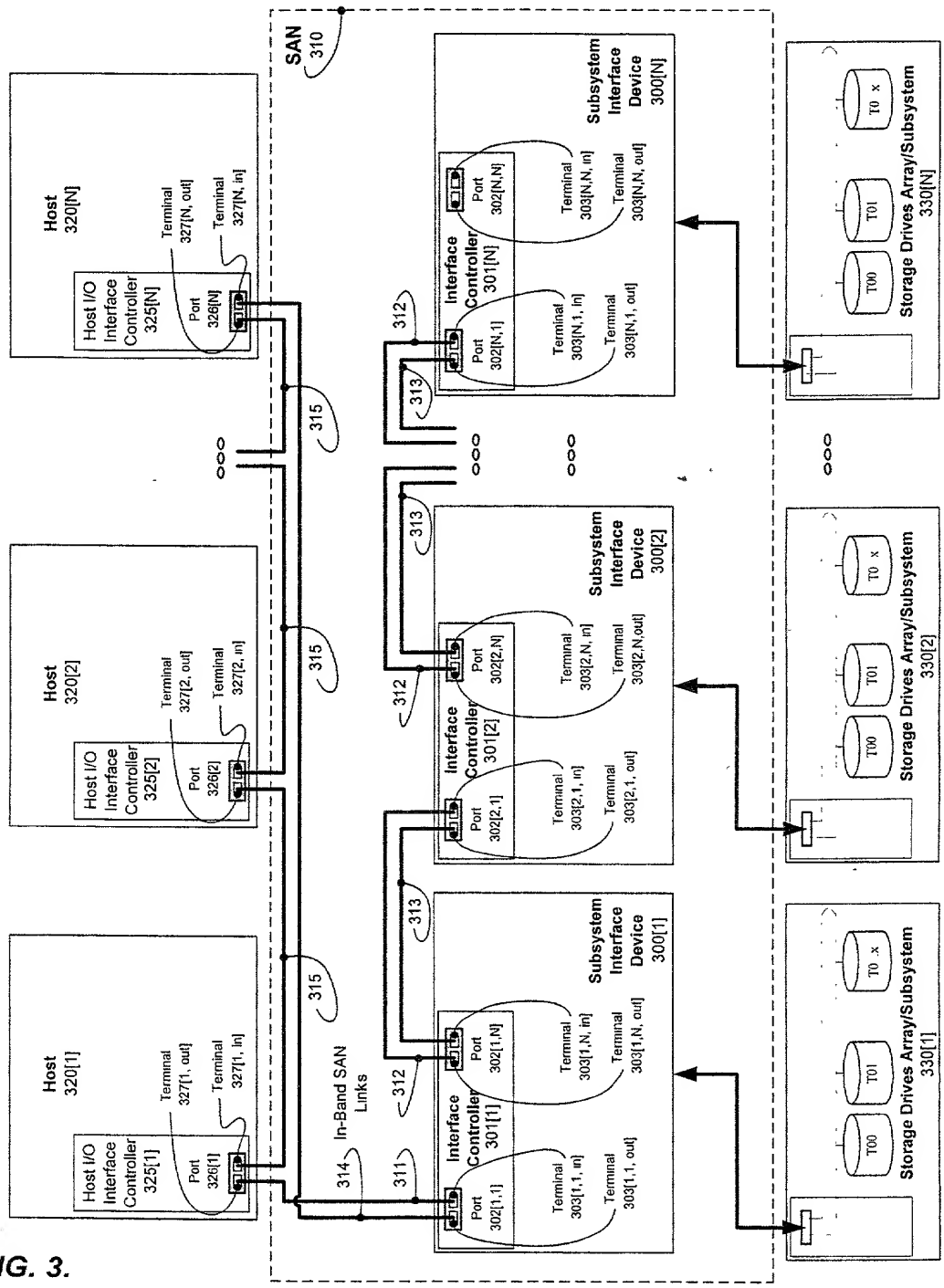
SAN
310
Host
320[N]
Host I/O
Interface
Controller
325[N]
Port
326[N]
Terminal
327[N, out]
Terminal
327[N, in]
Host
320[2]
Host I/O
Interface
Controller
325[2]
Port
326[2]
Terminal
327[2, out]
Terminal
327[2, in]
Host
320[1]
Host I/O
Interface
Controller
325[1]
Port
326[1]
Terminal
327[1, out]
Terminal
327[1, in]
315
312
313
311
314
In-Band SAN
Links
Subsystem
Interface
Device
300[N]
Interface
Controller
301[N]
Port
302[N,1]
Port
302[N,N]
Terminal
303[N,1, in]
Terminal
303[N,1, out]
Terminal
303[N,N, in]
Terminal
303[N,N, out]
Subsystem
Interface
Device
300[2]
Interface
Controller
301[2]
Port
302[2,1]
Port
302[2,N]
Terminal
303[2,1, in]
Terminal
303[2,1, out]
Terminal
303[2,N, in]
Terminal
303[2,N,out]
Subsystem
Interface
Device
300[1]
Interface
Controller
301[1]
Port
302[1,1]
Port
302[1,N]
Terminal
303[1,1, in]
Terminal
303[1,1, out]
Terminal
303[1,N, in]
Terminal
303[1,N, out]
Storage Drives Array/Subsystem
330[N]
Storage Drives Array/Subsystem
330[2]
Storage Drives Array/Subsystem
330[1]
T00
T01
T0 x

FIG. 3.

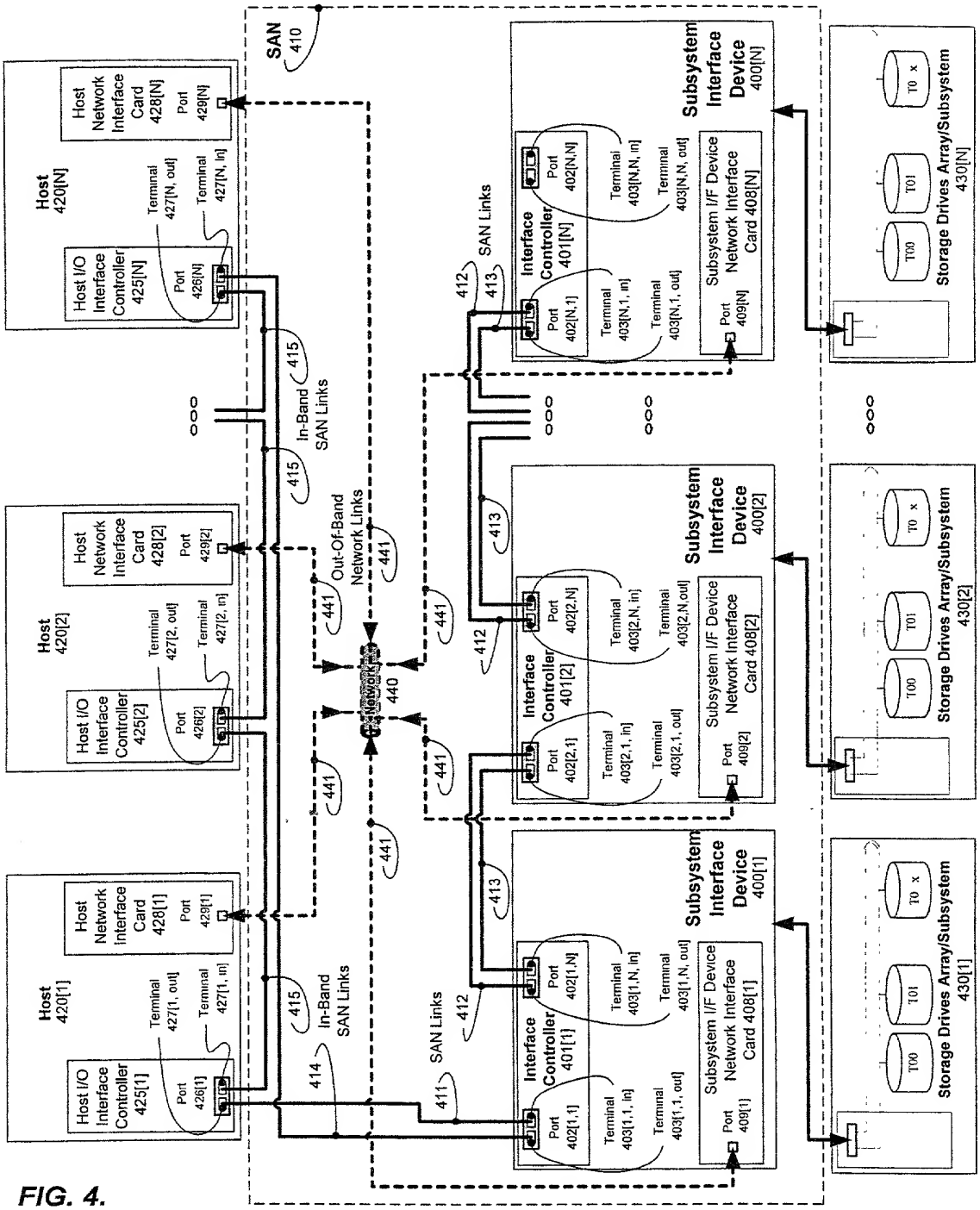
SAN
410
Host
420[1]
Host
420[2]
Host
420[N]
Host I/O Interface Controller 425[1]
Host I/O Interface Controller 425[2]
Host I/O Interface Controller 425[N]
Port 426[1]
Port 426[2]
Port 426[N]
Terminal 427[1, out]
Terminal 427[1, in]
Terminal 427[2, out]
Terminal 427[2, in]
Terminal 427[N, out]
Terminal 427[N, in]
Host Network Interface Card 428[1]
Host Network Interface Card 428[2]
Host Network Interface Card 428[N]
Port 429[1]
Port 429[2]
Port 429[N]
In-Band SAN Links
415
Out-Of-Band Network Links
441
Network
440
SAN Links
412
413
414
411
Subsystem Interface Device 400[1]
Subsystem Interface Device 400[2]
Subsystem Interface Device 400[N]
Interface Controller 401[1]
Interface Controller 401[2]
Interface Controller 401[N]
Port 402[1,1]
Port 402[1,N]
Port 402[2,1]
Port 402[2,N]
Port 402[N,1]
Port 402[N,N]
Terminal 403[1,1, in]
Terminal 403[1,1, out]
Terminal 403[1,N, in]
Terminal 403[1,N, out]
Terminal 403[2,1, in]
Terminal 403[2,1, out]
Terminal 403[2,N, in]
Terminal 403[2,N, out]
Terminal 403[N,1, in]
Terminal 403[N,1, out]
Terminal 403[N,N, in]
Terminal 403[N,N, out]
Subsystem I/F Device Network Interface Card 408[1]
Subsystem I/F Device Network Interface Card 408[2]
Subsystem I/F Device Network Interface Card 408[N]
Port 409[1]
Port 409[2]
Port 409[N]
Storage Drives Array/Subsystem 430[1]
Storage Drives Array/Subsystem 430[2]
Storage Drives Array/Subsystem 430[N]
T00
T01
T0 x

FIG. 4.

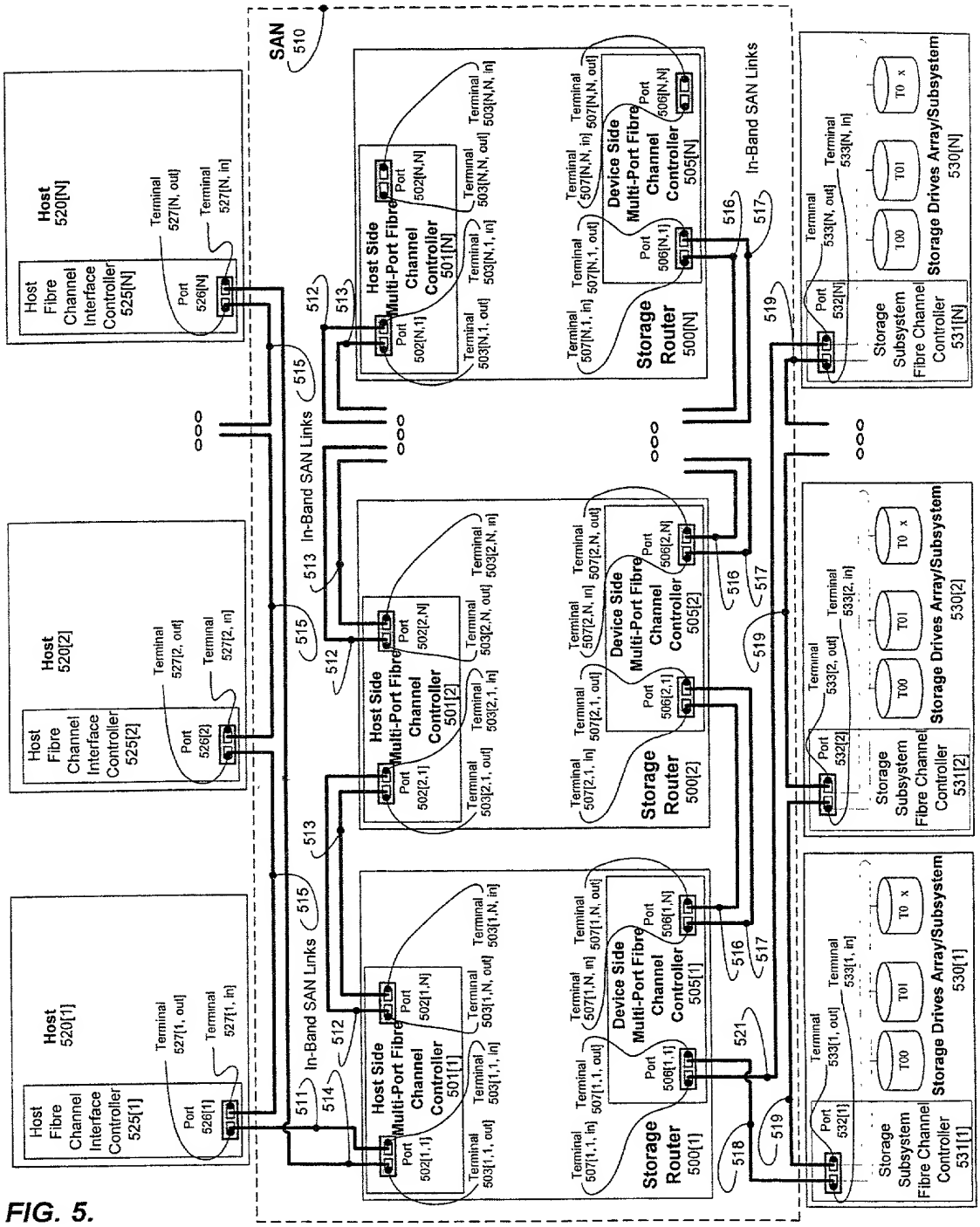
SAN
510
Host
520[1]
Host
520[2]
Host
520[N]
Host Fibre Channel Interface Controller
525[1]
525[2]
525[N]
Terminal
527[1, out]
527[1, in]
527[2, out]
527[2, in]
527[N, out]
527[N, in]
Port
526[1]
526[2]
526[N]
In-Band SAN Links
511
512
513
514
515
516
517
518
519
521
Storage Router
500[1]
500[2]
500[N]
Host Side Multi-Port Fibre Channel Controller
501[1]
501[2]
501[N]
Device Side Multi-Port Fibre Channel Controller
505[1]
505[2]
505[N]
Port
502[1.1]
502[1.N]
502[2.1]
502[2.N]
502[N.1]
502[N.N]
506[1.1]
506[1.N]
506[2.1]
506[2.N]
506[N.1]
506[N.N]
Terminal
503[1.1, out]
503[1.1, in]
503[1.N, out]
503[1.N, in]
503[2.1, out]
503[2.1, in]
503[2.N, out]
503[2.N, in]
503[N.1, out]
503[N.1, in]
503[N.N, out]
503[N.N, in]
Terminal
507[1.1, in]
507[1.1, out]
507[1.N, in]
507[1.N, out]
507[2.1, in]
507[2.1, out]
507[2.N, in]
507[2.N, out]
507[N.1, in]
507[N.1, out]
507[N.N, in]
507[N.N, out]
Storage Subsystem Fibre Channel Controller
531[1]
531[2]
531[N]
Port
532[1]
532[2]
532[N]
Terminal
533[1, out]
533[1, in]
533[2, out]
533[2, in]
533[N, out]
533[N, in]
Storage Drives Array/Subsystem
530[1]
530[2]
530[N]
T00
T01
T0 x
100
T01
T0 x

FIG. 5.

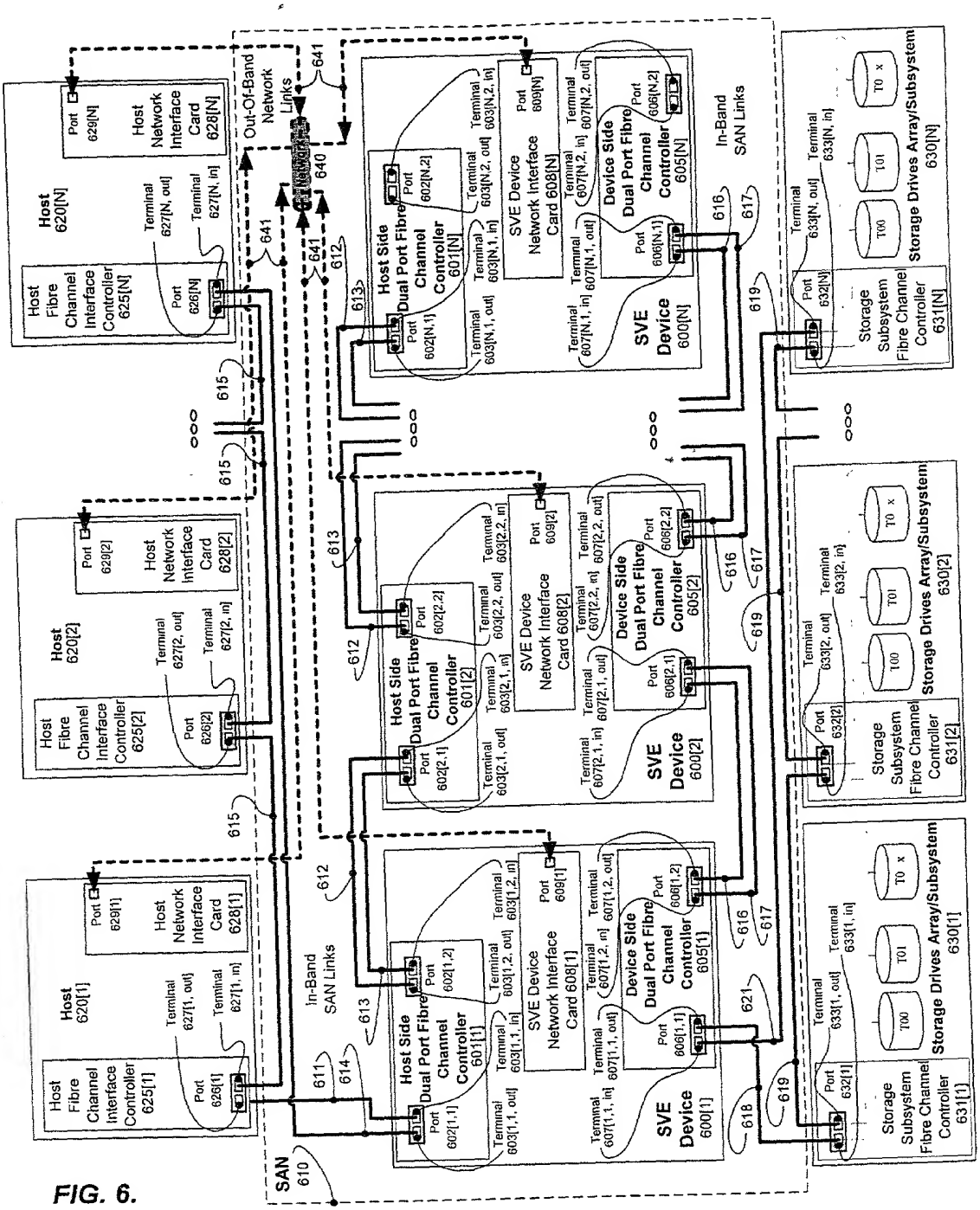
Host 620[1]
Host 620[2]
Host 620[N]
Host Fibre Channel Interface Controller 625[1]
Host Fibre Channel Interface Controller 625[2]
Host Fibre Channel Interface Controller 625[N]
Host Network Interface Card 628[1]
Host Network Interface Card 628[2]
Host Network Interface Card 628[N]
Out-Of-Band Network Links
In-Band SAN Links
SAN 610
Host Side Dual Port Fibre Channel Controller 601[1]
Host Side Dual Port Fibre Channel Controller 601[2]
Host Side Dual Port Fibre Channel Controller 601[N]
SVE Device Network Interface Card 608[1]
SVE Device Network Interface Card 608[2]
SVE Device Network Interface Card 608[N]
Device Side Dual Port Fibre Channel Controller 605[1]
Device Side Dual Port Fibre Channel Controller 605[2]
Device Side Dual Port Fibre Channel Controller 605[N]
SVE Device 600[1]
SVE Device 600[2]
SVE Device 600[N]
Storage Subsystem Fibre Channel Controller 631[1]
Storage Subsystem Fibre Channel Controller 631[2]
Storage Subsystem Fibre Channel Controller 631[N]
Storage Drives Array/Subsystem 630[1]
Storage Drives Array/Subsystem 630[2]
Storage Drives Array/Subsystem 630[N]

FIG. 6.

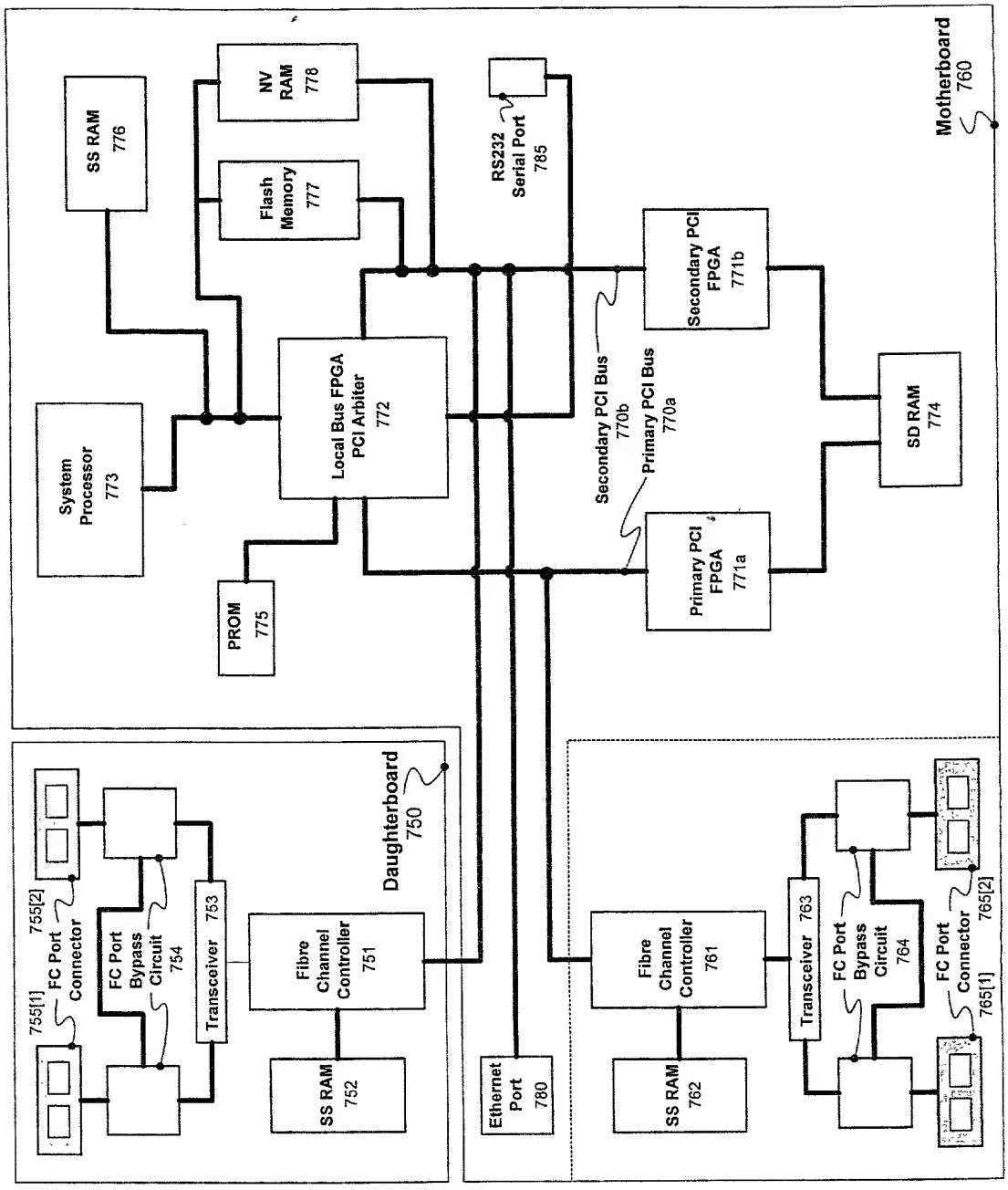
Motherboard
760
SS RAM
776
NV RAM
778
Flash Memory
777
RS232 Serial Port
785
Secondary PCI FPGA
771b
Secondary PCI Bus
770b
Primary PCI Bus
770a
SD RAM
774
System Processor
773
Local Bus FPGA PCI Arbiter
772
PROM
775
Primary PCI FPGA
771a
Daughterboard
750
755[2]
FC Port Connector
755[1]
FC Port Bypass Circuit
754
Transceiver
753
Fibre Channel Controller
751
SS RAM
752
Ethernet Port
780
Fibre Channel Controller
761
SS RAM
762
Transceiver
763
FC Port Bypass Circuit
764
FC Port Connector
765[2]
765[1]

FIG. 7.

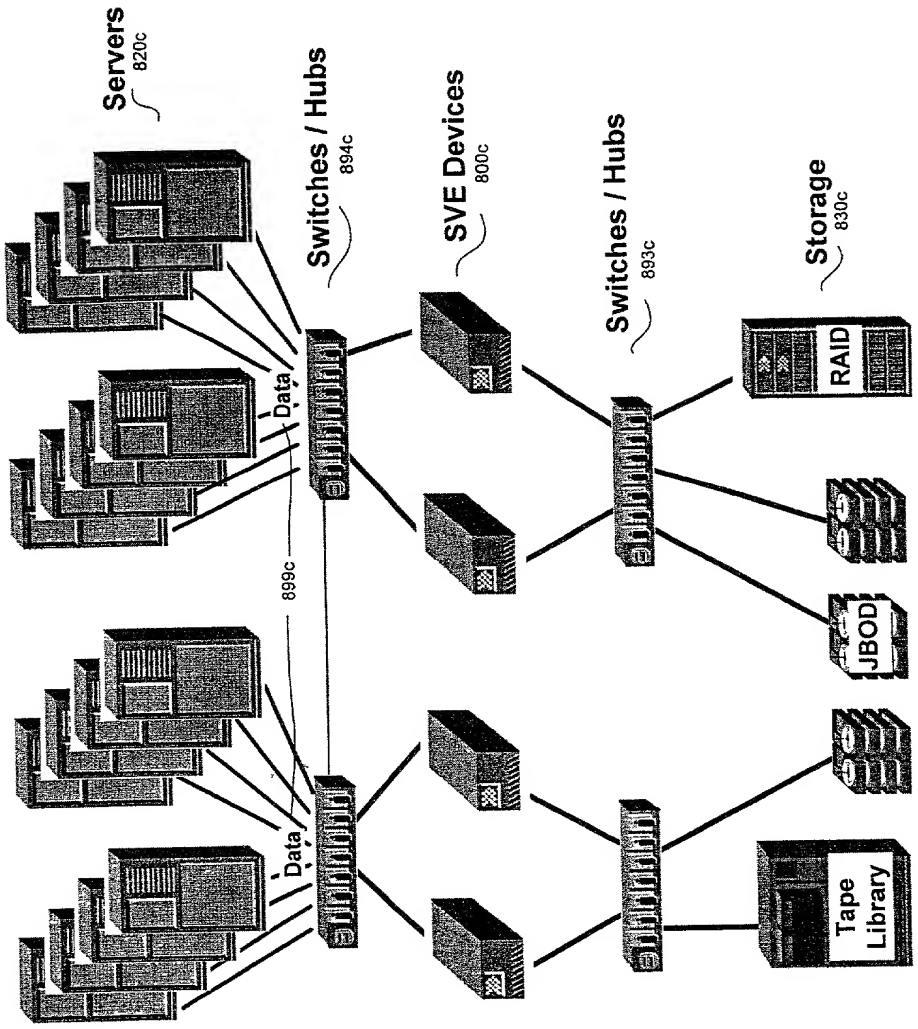
Servers
820c
Switches / Hubs
894c
SVE Devices
800c
Switches / Hubs
893c
Storage
830c
Data
Data
899c
RAID
JBOD
Tape Library

*FIG. 8.*

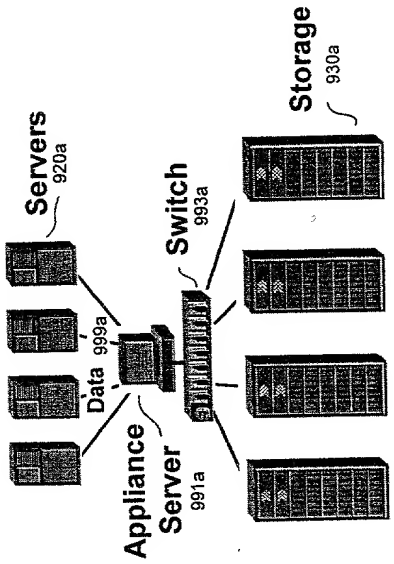
Servers
920a
Switch
993a
Storage
930a
Data
999a
Appliance
Server
991a

FIG. 9(a).

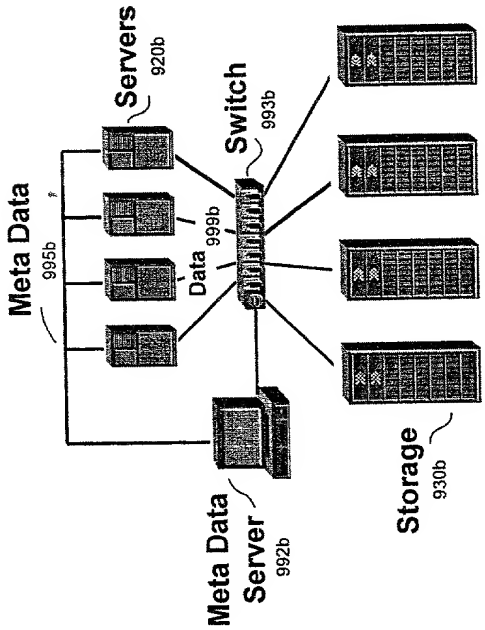
Servers
920b
Switch
993b
Meta Data
995b
Data
999b
Storage
930b
Meta Data
Server
992b

FIG. 9(b).